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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/025,549

12/26/2001

Anthony Vanlandeghem

KOB

8310

7590

03/03/2004

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EXAMINER

PADGETT, MARIANNE L

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,549

Applicant(s)

Van Landeghem et al

Examiner

M.L. Padgett

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 2/12/02
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-14 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-14 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received
- in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) (2/12/02)
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

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1. Claims 1-6 and 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Use of relative terms that lack clear metes and bounds in the claims, or in definitions in either the specification or cited relevant prior art, are vague and indefinite. In claim 1, "low" in "low pressure plasma" is such a relative term. On page 7 of the specification, a preferred range is found (the same as in claim 7), but a preference for disclosed values is not the same thing as a definition. For purposes of further examination it will be taken to mean any plasma preformed at pressure lower than atmospheric pressure.

In claims 8 and 13, frequency units of KHz, MHz and GHz are listed as ranges, but a unit does not designate any specific number, hence any frequency that can be converted in to named units could be considered to read on the claims (i.e. very broad, but not a 112 problem), or alternately the what range of values might be, could be considered undefined and unknown, thus unclear.

In claim 13, line 3, "0,1 mbar" is what value? Are two values being listed; or is it a typographical error; or was the European system of using commas instead of periods inadvertently used?

In claim 5, what is "natural" color to a synthetic? Without specifying the type or source of the cork material, natural is relative. Also see discussion above & below.

2. According to the Patent to Burns (6,127,437), cited by applicant "styrene bloc copolymers" are a subset of "thermoplastic elastomers" (col. 4, lines 9-20⁺), hence claims 4 and 14 will be taken to mean comprising any thermoplastic elastomer, which may or may not be or include a styrene bloc copolymer.

It is also noted that as used in the claims, "cork" may read on the natural cellulosic material regardless of its end use, or it may read on the function, i.e. that of a stopper, regardless of the material used to form the cork, except where further limitations are specifically claimed.

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The preamble of "preparing the surface of objects...for printing", is an intended use that does not necessitate use or any actual printing occurring, hence only those claims which have steps requiring printing to occur (claims 9 and 10), need to be shown to be used, or obvious for use in printing.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, (5) and, 6-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Williams et al (4,822,632).

In Williams et al (632), see plasma treatment of thermoplastic synthetic rubber stoppers, where the plasma may be applied before, during or after application of lubricating material. While applicant's claims do not require use of lubricant, neither do they exclude its presence, and the option of pretreatment before intended use is especially relevant to the claims as written. The plasma of Williams et

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al (632) may be a glow discharge plasma using gases, such as He, Ar, Ne, NH₃, N₂, O₂, at pressures at 5mm Hg, preferably about 0.1-1.0 mm Hg (i.e. 6.7 mbar, or 0.13-1.3 mbar), with radio frequencies of about 0.1 to 50 MHz (i.e. 100 KHz to 0.05 GHz). See the abstract; col. 3, lines 29-37; col. 4, lines 4-33 and 39.

Claim 5 is tentatively included, as there is no indication that the stoppers, i.e. corks, of Williams et al, are other than the natural color of Rubber, but alternately the claim language's meaning is questionable (see section 1, above), probably intended to mean something like the color of natural wood cork, which if clearly so stated, claim 5 would not be included in this rejection.

5. Claim 12 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Williams et al.

While no surface level dynes are disclosed, like parameters on like materials, with no critical differences in techniques, must be considered to inherently provide like results. Alternately, it would have been obvious for one of ordinary skill to provide sufficient plasma treatment to positively and adequately affect the adherence of the intended coating.

6. The patent 4,767,414 also to Williams et al and cited by applicant, is a continuation of the same parent as (632) above, hence equivalent thereto for purposes of the rejection.

7. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falla et al (2003/0031881 A1), which incorporates-by-reference Burns (5,855,287) or Noel et al (5,904,965).

Falla et al (abstract; [0002-0003]; [0008]; [0022]; and [0026]) includes all the limitations these claims, except it does not state if the plasma treatment applied to the synthetic corks, [0026] was at a reduced pressure from atmospheric pressure, however since the oldest conventional treatments that are referred to simply as plasma are typical at such reduced or "low" pressures, it would have been obvious to one of ordinary skill, as the most conventional way of achieving the taught procedure of Falla et al. Note that coating techniques disclosed by Falla et al in [0022] includes printing techniques.

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For taught cork compositions and appearances besides the styrene ethylene butadiene styrene (SEBS) mentioned in [0026], Falla et al refer the practitioner back to incorporated references [0008], such as Burns (287) in col. 2, lines 50-col.3, line 2; or Noel et al (965) in col. 7, lines 5-19; col. 12, lines 6-11 and 58-67; etc., which indicate that the synthetic corks should be if desired of natural appearance, and the indicia, etc. may be added via printing techniques known in the printing industry.

8. Claims 6-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falla et al (incorporating Burns (287) or Noel et al (965)) as applied to claims 1-5 above, and further in view of Williams et al (632) discussed above in sections 4-5 for claims 1-4, (5), 6-8 and 12.

Falla et al do not provide any parameters for the plasma pretreatment before coating, or for claims 9-10, directly suggest that the plasma is used before the printing coating, however their incorporated references also suggest use of conventional printing techniques, with Burns (286) explicitly teaching that pretreatment before printing is preferable (col. 5, lines 41-60), where a suggested pretreatment technique is corona, i.e. corona discharge, which is physically a type of plasma that is generally atmospheric pressure, and usually not referred to by the label of plasma.

Williams et al (632) while employing plasma with claimed process parameters applied also to stoppers of analogous compositions, is applying a lubricant film after, plasma treatment instead of printing, but also indicates that timing of the plasma treatment is not crucial to its effectiveness, with it possible to apply the lubricant such as via a solvent technique in a totally separate apparatus, hence while time ranges between a plasma pretreatment and coating are not given, due to the lack of any explicit need or teaching for immediate subsequent coating, a delay as claimed therebetween would not have been expected to be detrimental, and would have been likely to occur between batch type processes where there is transportation between different apparatus and stations.

It would have been obvious to use the plasma parameters as taught in Williams et al (632) in the suggested plasma pretreatment of Falla et al, as none are disclosed by Falla et al, requiring one to either

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provide one's own routine experimentation or look to the prior art. Also, it would have been further obvious as Williams et al (632) is treating like materials of similar function for analogous purposes. It is further observed that for individual printing of corks, such as for indicia, as suggested by Falla et al's overall teaching (inclusive of Burns and Noel et al, etc), there would when batch type plasma treatment of corks was employed, have been an additional time delay between printing the beginning stopper and the final one of a batch. Also as decorative or identification related printing is generally different for each user, one would not expect the printing to necessarily be done at the same time as the rest of the cork preparation, but to be made ready for use for specific orders.

It is further noted, that in Falla et al's specific example, the plasma treatment surfaces were said to have 42 dynes, which is lower than the claimed at least 50 dynes, however as the parameters provided by William et al (632) totally overlap with those claimed and for like materials, the inherence/obviousness discusses above in section 5, also apply here.

9. Claims 11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falla et al (+ Burns (287) or Noel et al), in view of Williams et al (632) as applied to claims 1-10 and 12 above, and further in view of Thomas et al.

The above combination does not discuss how the corks/stoppers are physically treated by the plasmas employed, i.e. batch, singularly, individually held or what, hence it would have been obvious for one of ordinary skill to look to the prior art for effective means of plasma treating objects of the taught physical shapes. Thomas et al (abstract; Fig. 1-4; col. 1, lines 10-15 and 47-61; col. 2, lines 28-34 and col. 3, lines 11-32, and 52 -col. 4.) illustrate effective plasma treatment of elastomeric closures (stopper) via tumbling in a drum, hence such would have been an obvious means for accomplishing the teaching of Falla et al + Williams et al, as it enables the required treatment for taught materials and shapes.

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10. The PCT reference to Caburet et al (WO 96/34926) is cited as also of interest to plasma treating elastomeric closures in a drum, as described by Spallek et al in col. 1, lines 48-58 in their background. The English abstract of the PCT reference does not discuss that aspect.

Claims 1-2, 5-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falla et al (+Burns or Noels et al), in view of Williams et al (632) as applied to claims 1-10 and 12 above, and further in view of Berker (4,821,900), optionally considering Grace et al (6,565,930 B1).

This rejection is directed to the alternative of treating natural cork (a natural polymeric, i.e. cellulosic, material), which none of the above combinations perform, however Berker teaches that a plasma pretreatment as represented by D.C. or AC. corona discharge is needed to improve the absorptive ability of cork to enable effective coating/adherence operations (abstract; summary), but Berker is mainly directed to impregnation and does not use "low" pressure; however as seen in the above combinations of disclosures, corona and low pressure plasmas are both known as effective for pretreatments for coating/printing operations. Therefore, it would have been obvious to one of ordinary skill in the art, that as natural cork, may need treatment to desirably effect adhesion, and as it may be coated/impregnated with materials, such as polymers or oils or lubricants (col. 4, lines 47-60 and col. 5, lines 17-24), which would adversely effect the subsequent ability to adhere further coatings, plasma pretreatment as suggested by Falla et al in view of Williams et al (632) for synthetic corks, would also have been considered obviously suitable for natural cork material. Grace et al (abstract ; col. 10, lines 30-50 ; col. 11, line 57- col. 12, line 14⁺) show that plasma pretreatment is known to be equivalently effective for natural wood/paper products, as for polymeric ones, including for printing processes, hence provide addition motivation and teaching of expected effectiveness.

12. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falla et al in view William et al and Berker as applied to claims 1-2, 5-10 and 12 above, and further in view of Thomas et al, as applied above in section 9.

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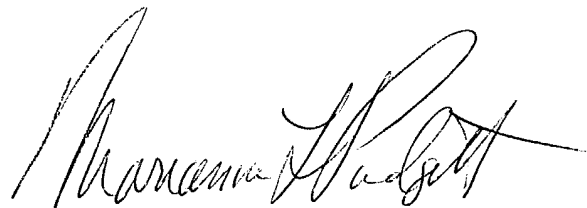
13. Other art of interest include Strobel et al (4,828,871), who provide additional teachings showing the equivalent usage of corona and glow discharge for imparting receptivity on shaped thermoplastic articles (abstract; col. 2, lines 21-29⁺); and Vernon, Jr. et al (2003/0148030 A1) who plasma coats elastomeric stoppers.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on Monday-Friday from about 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beck Shrive can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Padgett/LR
February 23, 2004
February 26, 2004



MARIANNE PADGETT
PRIMARY EXAMINER